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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/518,620 | 01/20/2006 | David Labonte | WEAT/0640 | 9031 |

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| EXAMINER | |
|---|---|
| OMGBA, ESSAMA | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3726 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/518,620 | LABONTE ET AL. | |
| | Examiner | Art Unit | |
| | Essama Omgba | 3726 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *18 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widney et al. (US Patent 6,481,082).

With regards to claim 1, Widney et al. discloses a method of manufacturing a continuous sucker rod coil wherein a plurality of heat treated round bars suited for use as sucker rod are provided (col. 3, lines 24-26), the rods having a Rockwell hardness value of about 26 HRc (col. 3, lines 26-28), fusing adjacent free ends of adjacent heat treated round bars to form one continuous length of rod (col. 3, lines 43-51), the fusing creating fused areas and a heat-affected zone at each fused area (see col. 2, lines 37-39), treating each of the heat-affected zones to alleviate irregularities induced during fusing (col. 3, lines 52-53), and winding the continuous length of rod into a finished coil (col. 3, lines 62-63). Although Widney et al. discloses using straight heat treated round bars instead of heat treated coils, however it would have been obvious to one of ordinary skill in the art at the time the invention was made that the using heat treated coils instead of straight heat treated round bars is an obvious matter of design choice wherein no stated problem is solved or unexpected results obtained in using heat treated coils versus heat treated straight rods as taught by Widney et al.

Regarding claim 2, see column 1, line 60.

Regarding claim 19, see column 2, line 61.

Regarding claim 20, see column 1, line 57.

3. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widney et al. in view of Current (US Patent 3,489,620).

Widney et al. discloses a method of manufacturing a continuous sucker rod coil as shown above except for placing the surface of the rod into compression by shot-peening. However Current teaches shot-peening the surface of a sucker rod to place it into compression, see column 1, lines 49-54 and column 2, lines 58-65. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have placed the surface of the sucker rod of Widney et al. under compression by shot-peening, in light of the teachings of Current, in order to enhance resistance against fatigue failure. Applicant should note that shot-peening before or after fusing is an obvious matter of design choice.

4. Claims 9-14, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widney et al. in view of Nast et al.

With regards to claims 9-14, Widney et al. discloses a method of manufacturing a continuous sucker rod coil wherein a plurality of heat treated round bars suited for use as sucker rod are provided (col. 3, lines 24-26), the rods having a Rockwell hardness value of about 26 HRc (col. 3, lines 26-28), fusing adjacent free ends of adjacent heat treated round bars to form one continuous length of rod (col. 3, lines 43-51), the fusing creating fused areas and a heat-affected zone at each fused area (see col. 2, lines 37-39), treating each of the heat-affected zones to alleviate irregularities induced during fusing (col. 3, lines 52-53), and winding the continuous length of rod into a finished coil

(col. 3, lines 62-63). Although Widney et al. does not disclose inspecting the coil for flaws, however it is known to inspect wire stock for flaws, removing the detected flaws to create free ends of the wire stock and fusing the free ends to create a continuous wire stock as attested by Nast et al., see column 2, lines 28-46 and 57-72. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have inspected the rolled stock of Widney for flaws, to have removed the detected flaws and to have fused the ends created by the removing of the defects, in light of the teachings of Nast et al., in order to obtain a rolled continuous rolled stock that is essentially free of defects. Applicant should note that marking the areas for flaws or reversing the rod to place the marked flaws at the beginning of the fusing step are obvious matter of design choice. Applicant should also note that although Widney et al. discloses using straight heat treated round bars instead of heat treated coils, however it would have been obvious to one of ordinary skill in the art at the time the invention was made that the using heat treated coils instead of straight heat treated round bars is an obvious matter of design choice wherein no stated problem is solved or unexpected results obtained in using heat treated coils versus heat treated straight rods as taught by Widney et al.

Regarding claims 18 and 21, Applicant should note that the recited processes are well known in the art, see the rejections of claims 2-8 above.

5. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widney et al./Nast et al. as applied to claims 1 and 14 above, and further in view of Payne (US Patent 4,045,591).

Widney et al./Nast et al. discloses a method of manufacturing a continuous sucker rod coil as shown above. Although Widney et al./Nast et al. does not disclose visual and eddy-current flaw detections, however it is known to use visual and eddy-current flaw detections in inspecting sucker rods as attested by Payne, see column 3, lines 3-10. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used visual and eddy-current inspection in the method of Widney et al./Nast et al., in light of the teachings of Payne, as is known in the art.

6. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widney et al./Nast et al. as applied to claims 1 and 14 above, and further in view of Yoshida et al. (US Patent 4,588,869).

Widney et al./Nast et al. discloses a method of manufacturing a sucker rod as shown above. Although Widney et al./Nast et al. does not explicitly discloses residual stress being induced during fusing, however it is known that butt welding creates residual stress at the weld and the heat-affected zone as attested by Yoshida et al., such residual must subsequently be relieved in order to avoid failure at the weld joint, see column 1, lines 13-25. Therefore it would have been obvious to one of ordinary skill in the art at the tie the invention was made that butt welding in the method of Widney et al./Nast et al. would create residual stress at the welds and heat-affected zones, which residual stress would have had to be relieved in order to avoid failure at the weld joints.

7. Claims 1, 2, 19 and 20 are, *in the alternative*, rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Sato et al. (US Patent 5,895,009), Widney et al. and Tessmann (US Patent 3,259,969).

With regards to claim 1, Applicant, at pages 1-3 of the specification to be known as AAPA, discloses a method of manufacturing a continuous sucker rod coil, the method comprising fusing together a number of raw coils end-to-end to form one continuous sucker rod of a desired length, the ends being fused together by welding which creates heat-affected zones adjacent to the welded area, treating the entire length of the continuous sucker rod to produce a rod of consistent hardness and strength, and coiling the continuous rod. AAPA does not disclose using coils having the same uniform hardness to form the continuous rod and treating only the heat-affected zones. However Sato et al. teaches welding a plurality of coils together to make coils into a continuous form wherein coils the coils are formed from a metallic strip that has been processed into a form having desired properties and thickness by repeated rolling and heat treatment on an ingot and it is slit into desired width to form the coils (col. 1, lines 23-33). Further although Sato et al. does not explicitly disclose one of the desired properties from heat treatment being provision of uniform hardness, however it is known to heat-treat straight rods to be formed into continuous sucker rods such that the rods have uniform hardness prior to welding the rods to form the coil as attested by Widney et al., see column 3, lines 24-28, 37-39 and 43-53. Still further Tessmann teaches welding lengths of wire to form a continuous length wherein the lengths of wire are butt welded at joints, the butt welding creating heat affected zones, and treating only the

heat-affected zones in order to bring its tensile strength up to that of the wire at either side of the joint (col. 1, lines 18-52 and 63-72 and col. 2, lines 1-8). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used coils having the same uniform hardness to form the continuous rod of AAPA by welding the ends of the coils, in light of the teachings of Sato et al. and Widney et al., in order to form a continuous rod having a uniform hardness, and it would have also been obvious to only treat the heat-affected zones resulting from the welding, in light of the teachings of Tessmann, in order to bring the tensile strength of the heat-affected zones up to that of the coil at either side of the heat-affected zone, thus simplifying the manufacturing process of the continuous sucker rod and saving on production costs.

Regarding claim 2, see column 1, line 60 of Widney et al.

Regarding claim 19, see column 2, line 61 of Widney et al.

Regarding claim 20, see column 1, line 57 of Widney et al.

8. Claims 3-8 are, *in the alternative*, rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA/Sato et al./Widney et al./Tessmann as applied to claim 1 above, and further in view of Current.

AAPA/Sato et al./Widney et al./Tessmann discloses a method of manufacturing a continuous sucker rod coil as shown above except for placing the surface of the rod into compression by shot-peening. However Current teaches shot-peening the surface of a sucker rod to place it into compression, see column 1, lines 49-54 and column 2, lines 58-65. Therefore it would have been obvious to one of ordinary skill in the art at the time

the invention was made, to have placed the surface of the sucker rod of AAPA/Sato et al./Widney et al./Tessmann under compression by shot-peening, in light of the teachings of Current, in order to enhance resistance against fatigue failure. Applicant should note that shot-peening before or after fusing is an obvious matter of design choice.

9. Claims 9-14, 18 and 21 are, *in the alternative*, rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Sato et al., Widney et al., Tessmann and Nast et al.

With regards to claims 9-14, Applicant, at pages 1-3 of the specification to be known as AAPA, discloses a method of manufacturing a continuous sucker rod coil, the method comprising fusing together a number of raw coils end-to-end to form one continuous sucker rod of a desired length, the ends being fused together by welding which creates heat-affected zones adjacent to the welded area, treating the entire length of the continuous sucker rod to produce a rod of consistent hardness and strength, and coiling the continuous rod. AAPA does not disclose using coils having the same uniform hardness to form the continuous rod and treating only the heat-affected zones. However Sato et al. teaches welding a plurality of coils together to make coils into a continuous form wherein coils the coils are formed from a metallic strip that has been processed into a form having desired properties and thickness by repeated rolling and heat treatment on an ingot and it is slit into desired width to form the coils (col. 1, lines 23-33). Further although Sato et al. does not explicitly disclose one of the desired properties from heat treatment being provision of uniform hardness, however it is known

to heat-treat straight rods to be formed into continuous sucker rods such that the rods have uniform hardness prior to welding the rods to form the coil as attested by Widney et al., see column 3, lines 24-28, 37-39 and 43-53. Still further Tessmann teaches welding lengths of wire to form a continuous length wherein the lengths of wire are butt welded at joints, the butt welding creating heat affected zones, and treating only the heat-affected zones in order to bring its tensile strength up to that of the wire at either side of the joint (col. 1, lines 18-52 and 63-72 and col. 2, lines 1-8). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used coils having the same uniform hardness to form the continuous rod of AAPA by welding the ends of the coils, in light of the teachings of Sato et al. and Widney et al., in order to form a continuous rod having a uniform hardness, and it would have also been obvious to only treat the heat-affected zones resulting from the welding, in light of the teachings of Tessmann, in order to bring the tensile strength of the heat-affected zones up to that of the coil at either side of the heat-affected zone, thus simplifying the manufacturing process of the continuous sucker rod and saving on production costs. Although AAPA/Sato et al./Widney et al./Tessmann does not disclose inspecting the coil for flaws, however it is known to inspect wire stock for flaws, removing the detected flaws to create free ends of the wire stock and fusing the free ends to create a continuous wire stock as attested by Nast et al., see column 2, lines 28-46 and 57-72. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have inspected the rolled stock of AAPA/Sato et al./Widney et al./Tessmann for flaws, to have removed the detected flaws and to have

fused the ends created by the removing of the defects, in light of the teachings of Nast et al., in order to obtain a rolled continuous rolled stock that is essentially free of defects. Applicant should note that marking the areas for flaws or reversing the rod to place the marked flaws at the beginning of the fusing step are obvious matter of design choice.

Regarding claims 18 and 21, Applicant should note that the recited processes are well known in the art, see the rejections of claims 2-8 above.

10. Claims 15-17 are, *in the alternative*, rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA/Sato et al./Widney et al./Tessmann/Nast et al. as applied to claims 1 and 14 above, and further in view of Payne.

AAPA/Sato et al./Widney et al./Tessmann/Nast et al. discloses a method of manufacturing a continuous sucker rod coil as shown above. Although AAPA/Sato et al./Widney et al./Tessmann/Nast et al. does not disclose visual and eddy-current flaw detections, however it is known to use visual and eddy-current flaw detections in inspecting sucker rods as attested by Payne, see column 3, lines 3-10. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used visual and eddy-current inspection in the method of AAPA/Sato et al./Widney et al./Tessmann/Nast et al., in light of the teachings of Payne, as is known in the art.

11. Claims 22 and 23 are, *in the alternative*, rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA/Sato et al./Widney et al./Tessmann/Nast et al. as applied to claims 1 and 14 above, and further in view of Yoshida et al.

AAPA/Sato et al./Widney et al./Tessmann/Nast et al. discloses a method of manufacturing a sucker rod as shown above. Although AAPA/Sato et al./Widney et al./Tessmann/Nast et al. does not explicitly discloses residual stress being induced during fusing, however it is known that butt welding creates residual stress at the weld and the heat-affected zone as attested by Yoshida et al., such residual must subsequently be relieved in order to avoid failure at the weld joint, see column 1, lines 13-25. Therefore it would have been obvious to one of ordinary skill in the art at the tie the invention was made that butt welding in the method of AAPA/Sato et al./Widney et al./Tessmann/Nast et al. would create residual stress at the welds and heat-affected zones, which residual stress would have had to be relieved in order to avoid failure at the weld joints.

### *Response to Arguments*

12. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Essama Omgba whose telephone number is (571) 272-4532. The examiner can normally be reached on M-F 9-6:30, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Essama Omgba/
Primary Examiner, Art Unit 3726

eo
September 09, 2010